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ENROLLMENTS AND DEGREES

The decade of the 1990s is establishing itself as one that is dedicated to analyzing, comparing and correcting the science education offered in our schools. Although much of this attention will be focused on the secondary schools, there is also increasing interest at the collegiate level. For the past thirty years the survey of Enrollments and Degrees has monitored the number of physics students whose interest in this discipline ranged from enrolling in a non-mathematical introductory physics course as an elective, to completing a doctoral dissertation in one of the physics subfields.

This report provides detailed information on physics enrollments for the academic year 1990-91 as well as on degree recipients in the class of 1990. Comparable astronomy data began to be collected in the mid 1970s and the most recent enrollment and degree information is summarized in the last table of this report. To be able to evaluate changes, we present six tables showing ten-year trends of physics or astronomy data. All the information is collected annually from the physics and astronomy departments.

By classifying all institutions according to their highest physics degree programs offered, we call attention to the uneven distribution of physics students among the degree-granting departments. The three categories are doctoral, master's and bachelor's granting institutions, and **Table I** lists the numbers in each category for the most recent five-year period. Each year, changes in degree programs among the institutions take place that, in 1990-91, included the discontinuance of bachelor's programs that had been on the books for several years. Five institutions have two doctorate-granting physics departments, and the footnote of **Table I** identifies them.

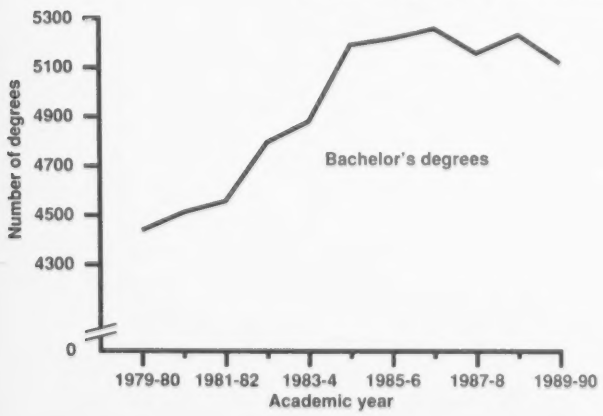
Table I. Institutions by highest physics degree offered, 1986 to 1991.

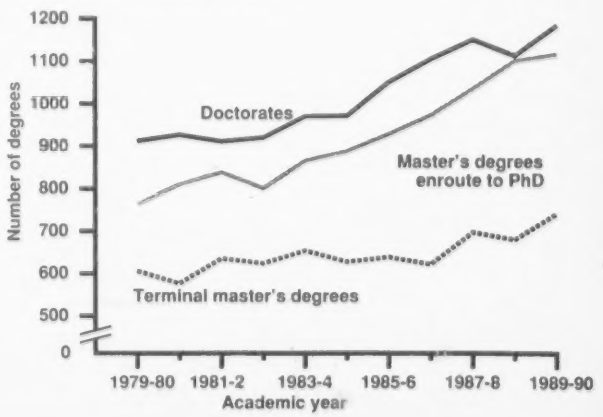
Academic year	Doctoral-granting*	Master's-granting	Bachelor's-granting
1986–87	168	90	496
1987–88	169	90	498
1988–89	169	89	496
1989–90	171	86	496
1990–91	172	84	491

**Five of these institutions have two physics doctorate-granting departments. They are Stanford U., U. of CA-Davis, Yale U., Harvard U. and Cornell U.*

A comprehensive picture of the physics degrees granted since 1979 is presented in **Figure I**. By making a distinction between a terminal master's degree and one granted enroute to a higher physics degree, we are presenting four trends for the three levels of physics degrees. Both doctorates and terminal master's degrees indicate distinct increases for the most recent year while bachelor's degrees continue their leveling trend.

Figure I. Physics degrees awarded by academic year, 1979 to 1990.





Member Societies: The American Physical Society • Optical Society of America • Acoustical Society of America • The Society of Rheology • American Association of Physics Teachers
American Crystallographic Association • American Astronomical Society • American Association of Physicists in Medicine • American Vacuum Society • American Geophysical Union

Table II. Physics enrollments* and degrees awarded by academic year, 1979 to 91.

Academic year	Number of physics degrees granted (July 1 to June 30) Bachelor's	Master's	Doctor's	Undergraduate physics major enrollments Juniors	Seniors	Graduate physics student enrollments Total	1st year
1979–80	4440	1370	912	5696	4942	9 647	2439
1980–81	4513	1387	927	5905	5091	9 934	2564
1981–82	4558	1476	912	6386	5372	10 173	2637
1982–83	4795	1426	921	6299	5580	10 429	2630
1983–84	4878	1521	971	6303	5658	10 922	2855
1984–85	5188	1518	972	6601	6009	11 337	2863
1985–86	5214	1589	1051	6689	6092	12 011	2981
1986–87	5253	1596	1105	6592	6119	12 616	3162
1987–88	5152	1733	1150	6412	5959	13 143	3274
1988–89	5226	1781	1112	6390	5914	13 361	3132
1989–90	5111	1857	1183	6313	5896	13 708	3059
1990–91				6445	6031	14 065	3278

**Includes part-time students.*

For **Table II** we combine the two types of master's degrees when we present the numerical data for **Figure I** and add the undergraduate and graduate physics enrollments for the entire decade of the 1980s. Noteworthy among these data are the 1990-91 totals recorded for juniors, seniors and first-year graduate students; in each case the increase reverses what was a declining trend. The total graduate enrollment continues to increase at a steady pace.

When the data in **Table II** are divided according to the three types of institutions defined in **Table I**, the results are presented as **Table III**. The format of this table shows that

Table III. Undergraduate and graduate enrollments* and degrees by institution type, 1979 to 91.

Academic year	Number of physics degrees granted (July 1 to June 30) Bachelor's	Master's	Doctor's	Undergraduate physics-major enrollments Juniors	Seniors	Graduate physics student enrollments Total	1st year
			Doctoral-granting institutions				
1979–80	2142	1151	912	2696	2491	8 744	2072
1980–81	2123	1161	927	2765	2568	9 062	2223
1981–82	2179	1281	912	2996	2671	9 273	2275
1982–83	2192	1210	921	2962	2645	9 524	2288
1983–84	2195	1319	971	2955	2824	10 006	2495
1984–85	2460	1286	972	3059	3105	10 357	2443
1985–86	2377	1358	1051	3120	2961	10 937	2574
1986–87	2473	1357	1105	3132	3148	11 389	2667
1987–88	2460	1432	1150	3030	2991	11 880	2737
1988–89	2526	1465	1112	3018	2972	12 069	2638
1989–90	2463	1490	1183	2877	2993	12 440	2623
1990–91				3082	3077	12 700	2782
			Master's-granting institutions				
1979–80	585	219		705	650	903	367
1980–81	589	226		868	655	872	341
1981–82	532	195		917	734	900	362
1982–83	554	216		877	752	905	342
1983–84	610	202		830	722	916	360
1984–85	658	232		974	781	980	420
1985–86	632	231		1014	865	1 074	407
1986–87	660	239		913	791	1 227	495
1987–88	591	301		871	750	1 263	537
1988–89	582	316		822	795	1 292	494
1989–90	517	367		773	737	1 268	436
1990–91				800	760	1 365	496
			Bachelor's-granting institutions				
1979–80	1713			2295	1801		
1980–81	1801			2272	1868		
1981–82	1847			2473	1967		
1982–83	2049			2460	2183		
1983–84	2073			2518	2112		
1984–85	2070			2568	2123		
1985–86	2205			2555	2266		
1986–87	2120			2547	2180		
1987–88	2101			2511	2218		
1988–89	2118			2550	2147		
1989–90	2131			2663	2166		
1990–91				2563	2199		

**Includes part-time students.*

Table IV. Number of students enrolling in their first college/university physics course in 1990–91.

	Type of physics department								
	Doctoral-granting			Nondoctoral-granting			Total		
Type of course	Calculus-based	Algebra-based	Non-math.	Calculus-based	Algebra-based	Non-math.	Calculus-based	Algebra-based	Non-math.
Discipline of potential majors							(thousands)		
Engineering majors	61%	3%	1%	53%	5%	2%	83.3	4.4	0.7
Physical sciences majors*	21	8	1	29	8	1	34.5	8.9	0.6
Biology, health-related majors	13	44	6	9	57	5	17.2	55.5	4.2
Other, incl. not yet declared	5	45	92	9	30	92	8.6	42.2	64.8
	100%	100%	100%	100%	100%	100%			
Numbers in thousands	95.3	63.1	31.6	48.3	48.0	38.7	143.6	111.1	70.3
Total introductory enrollment	190,000			135,000			325,000		
Number of physics departments	171 departments**			575 departments			746 departments		

Includes physics, chemistry, mathematics, etc.

***There are six doctoral-granting institutions that have no undergraduate physics program.*

172 doctoral institutions enroll approximately half of the undergraduate physics majors, thereby spreading the other half among 575 physics departments. The distribution of graduate students is similarly uneven. Master's-granting institutions represent one third of the graduate physics departments, but enroll less than 10% of the graduate physics students.

Introductory physics enrollment.

As colleges compare and re-evaluate their curricula, many of them recognized the need to raise the science requirements in their baccalaureate programs, irrespective of the declared majors. To implement such a change, many institutions turned to their physics departments with the request that they broaden the appeal of their introductory courses. The data in **Table IV** show how diversified was the group of undergraduates enrolled in three levels of introductory physics courses, during the academic year 1990-91.The three levels correspond to the students' mathematical skills. The combined enrollment for that year was 325,000 students. Although the great majority of these students take introductory physics to fulfill a requirement, there are those who choose an introductory physics course as an elective. Thus we find from the three total columns of **Table IV** that engineering majors who took a calculus-based course comprised the largest proportion (26%) of the total enrollment; they are followed by the non-science majors (20%)to whom the non-mathematical courses generally appealed; the health-related majors appear to have preferred the algebra-based courses whereas students interested in the physical sciences or mathematics had the necessary background to enroll in the calculus-based courses. The last two rows of **Table IV** are a further illustration of the uneven distribution of students because one can calculate that 23% of the physics departments enroll 58% of the introductory students.

Undergraduate physics majors.

Taking into consideration the number of required courses, it is essential that the decision to major in physics is made as close to the freshman year as possible. Consequently, chairpersons who monitor the enrollments in lower level physics courses can provide fairly reliable estimates of their prospective physics majors at the freshman and sophomore levels. From the early 1980s on, each fall those estimates ranged from eight to nine thousand freshmen who were sufficiently motivated to express their intentions to major in physics. Traditionally, two-thirds of each class of freshman physics majors sustain their interest in the subject matter over a four-year period while they derive additional encouragement from either the research atmospheres offered at 172 large universities, (see **Table I**) or the intimate environments created by some of the 491 four-year colleges. The resulting annual production of physics bachelors is presented in the first part of **Figure I**.

We present four graduating classes in **Figure II**, starting with the class of 1991 for which we have firm data. This class

Figure II. Actual and projected number of undergraduate physics majors.

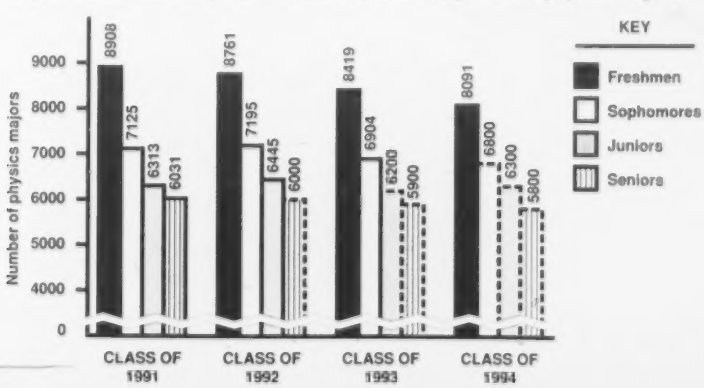


Table V. Attrition of undergraduate physics majors by type of institution, 1978–79 to 1990–91.

Graduating class	Doctoral-granting institution		Master's-granting institution		Bachelor's-granting institution	
	No. of freshmen	% reaching sr. year	No. of freshmen	% reaching sr. year	No. of freshmen	% reaching sr. year
1982	3520	73	1140	63	3410	59
1983	3590	72	1160	63	3510	60
1984	3770	74	1250	60	3550	60
1985	3890	75	1160	68	3560	60
1986	3940	78	1170	69	3570	61
1987	3930	77	1120	71	3590	61
1988	3890	76	1125	71	3585	60
1989	3850	77	1130	70	3670	59
1990	3900	77	1105	67	3700	58
1991	3870	80	1080	70	3800	58

Note: Number of freshmen are based on 3-year averages.

shows a 32% attrition between the 8908 freshmen, estimated by the chairpersons in the fall of 1987, and the 6031 seniors recorded for the academic year 1990-91. The declining trend, formed by the four estimates for successive classes of freshmen, occurred only at the two types of graduate institutions, and is expected to result in lower rates of attrition by the time each class has reached senior status; past studies have shown that smaller numbers of freshmen tend to include a greater proportion of serious students. Thus we project the attrition rates to decline from 32% to 30% and 28% for the classes of 1993 and 1994 respectively.

A composite attrition rate of 32% for the class of 1991 can be shown to range from 20% to 42% depending upon which group of undergraduate physics majors we analyze. **Table V** compares the retention rates of undergraduate physics majors at each of the three types of institutions defined earlier, and shows what changes were recorded in those rates over a ten-year period. For example, PhD-granting institutions not only have the highest retention rates but also the ones that are increasing; and since their collective freshman classes are decreasing, an even higher percentage of freshmen may remain physics majors into the senior year. The lowest retention rate was consistently recorded for the four-year colleges where only 58% reached senior status in the two most recent years. The master's institutions, with the smallest enrollment of physics majors, fall halfway between the retention rates of the other two types of institutions; they too may increase their retention rates as their freshmen decline.

Undergraduate physics programs are offered in all regions of the United States as indicated by the distribution of physics majors in **Table VI**. Since almost half of the physics majors are interested in immediate employment rather than graduate school, approximately one thousand physics majors extend their senior status over more than one year in order to acquire some experience with the job market. This group has doubled since the early 1980s and is presented in **Table VI** under the heading "Fifth-year undergraduates." The lower portion of this table presents the enrollments by type of institution from which the trend data of **Table V** were calculated.

Table VI. Undergraduate physics majors by geographic region and type of institution, 1990–91.

Geographic region*	Estimated** no. of freshmen	Estimated** no. of sophomores	Number of juniors	Number of seniors	Fifth-year undergraduates
New England	581	602	537	553	48
Mid Atlantic	1317	1157	988	887	93
E. N. Central	1317	1091	1035	996	171
W. N. Central	778	638	535	475	100
S. Atlantic	1209	1042	932	729	152
E. S. Central	398	290	277	272	45
W. S. Central	830	626	571	527	89
Mountain	530	496	465	548	153
Pacific	1131	962	1105	1044	261
Total	8091	6904	6445	6031	1112
Doctoral-granting inst.	3426	3017	3082	3077	654
Master's-granting inst.	961	882	800	760	191
Bachelor's-granting inst.	3704	3005	2563	2194	267

** New England—CT, ME, MA, NH, RI, VT; Middle Atlantic—NJ, NY, PA; East North Central—IL, IN, MI, OH, WI; West North Central—IA, KS, MN, MO, NE, ND, SD; South Atlantic—DE, DC, FL, GA, MD, NC, SC, VA, WV; East South Central—AL, KY, MS, TN; West South Central—AR, LA, OK, TX; Mountain—AZ, CO, ID, MT, NV, NM, UT, WY; Pacific—AK, CA, HI, OR, WA.*
***Estimates of potential physics majors are made by the physics department chairpersons.*

Table VII. Trend in entering U.S. and foreign graduate physics students, 1979 to 1991.

Academic year	No. of first-year graduate students			% foreign students of total
	U.S.	Foreign	Total	
1979–80	1700	739	2439	30.3
1980–81	1720	844	2564	32.9
1981–82	1654	983	2637	37.3
1982–83	1576	1054	2630	40.1
1983–84	1763	1092	2855	38.2
1984–85	1747	1116	2863	39.0
1985–86	1721	1260	2981	42.3
1986–87	1799	1363	3162	43.1
1987–88	1944	1330	3274	40.6
1988–89	1825	1307	3132	41.7
1989–90	1724	1335	3059	43.6
1990–91	1890	1388	3278	42.3

Graduate enrollment.

It appears that the concerted efforts of physics faculty to attract more graduate students who are U.S. citizens may be paying off. The basis for this statement comes from the latest count of U.S. citizens among the entering graduate physics students. After three successive years of gradually declining totals for this group from 1944 to 1724, an increase of almost 10% was recorded for the academic year 1990-91. To put these data into the proper perspective, we present a twelve-year trend in **Table VII** that reflects the dramatic increases in foreign graduate students during the early 1980s. Thus we find that, since 1979-80, the total number of entering graduate students increased by one third, but the number of foreign students almost doubled.

For a more detailed look at the changing graduate enrollment, we present **Table VIII**, which focuses on the study status and citizenship of all level graduate physics students at two types of institutions. The rapid increase in foreign graduate students who entered the U.S. began in the early 1980s and had a different impact on the two types of institutions. For example, foreign students are primarily interested in doctoral programs. The doctoral institutions, with adequate funds for assistantships, continued the custom of choosing the brightest students among their applicants, irrespective of their citizenships; as a result of this practice the proportion of foreign students enrolled in PhD programs climbed from 31% to 43% by 1989. But the number of qualified students with exit visas from mainland China and other Asian countries continued to grow to the extent that it exceeded the number of openings available for them in doctoral programs; this scenario obliged some foreign students to apply for admission to master's institutions with the intention of transferring to a doctoral institution after one or two years.

Although there are 84 physics master's institutions in the U.S., not all of them are in a position to attract foreign students. For example, one group of institutions offers only late afternoon or evening classes to part-time students who are full-time employees of industrial companies and they have little or no financial support for their graduate students. Another group of master's institutions offers day-time classes and has teaching assistantships that can be offered to foreign students who depend on financial support from their graduate schools because their visas do not permit them to hold off-campus positions. The right-hand portion of **Table VIII** includes data from all 84 master's institutions and appears to indicate a leveling of the percentages the foreign enrollment represents.

Table VIII. Full-time, part-time, and foreign graduate physics enrollments by type of institution, 1981 to 1991.

Academic year	Graduate students at doctoral-granting institutions					Graduate students at master's-granting institutions				
	Full-time	Part-time	Foreign	% foreign of total	Total	Full-time	Part-time	Foreign	% foreign of total	Total
1981–82	8 555	718	2894	31.2	9 273	543	357	213	23.7	900
1982–83	8 712	812	3193	33.5	9 524	566	339	221	24.4	905
1983–84	9 285	721	3433	34.3	10 006	569	347	254	27.7	916
1984–85	9 647	710	3811	36.8	10 357	604	376	293	29.9	980
1985–86	10 119	818	4259	38.9	10 937	620	454	306	28.5	1074
1986–87	10 538	851	4519	39.7	11 389	772	455	397	32.4	1227
1987–88	11 015	865	4813	40.5	11 880	797	466	448	35.5	1263
1988–89	11 182	887	5049	41.8	12 069	830	462	471	36.5	1292
1989–90	11 643	797	5328	42.8	12 440	839	429	454	35.8	1268
1990–91	11 866	868	5334	41.9	12 700	875	480	489	35.8	1365

Table IX. Regional distribution of U.S. and foreign teaching assistants by type of institution, 1990–91.

Geographic region*		Doctoral-granting institutions		Master's-granting institutions	
		Total no. of TA's	Total no. of foreign TA's	Total no. of TA's	Total no. of foreign TA's
New England		483	259	35	20
Mid Atlantic		646	399	28	8
E. N. Central		778	351	173	109
W. N. Central		254	140	54	17
S. Atlantic		646	289	95	34
E. S. Central		159	79	36	17
W. S. Central		441	237	69	38
Mountain		315	163	10	9
Pacific		629	221	77	19
Total	N	4351	2138	577	271
	%		49%		47%

** New England—CT, ME, MA, NH, RI, VT; Middle Atlantic—NJ, NY, PA; East North Central—IL, IN, MI, OH, WI; West North Central—IA, KS, MN, MO, NE, ND, SD; South Atlantic—DE, DC, FL, GA, MD, NC, SC, VA, WV; East South Central—AL, KY, MS, TN; West South Central—AR, LA, OK, TX; Mountain—AZ, CO, ID, MT, NV, NM, UT, WY; Pacific—AK, CA, HI, OR, WA.*

For information on how many teaching assistantships are available and what proportion of them is held by foreign graduate students, we present **Table IX** which also gives a geographic distribution of these sources of support.

Degrees granted.

Although the demand for projections remains high, the increasingly diversified backgrounds of physics doctoral candidates makes it more difficult to project the number of degree recipients for future years. For example, in past years we found a high correlation between the first-year graduate students at PhD-granting institutions and the number of doctorates granted five years later. But this formula makes no allowance for foreign students who enter doctoral programs with advanced standing either from a master's granting institution or from a foreign university. On the other hand, the number of years required to complete a doctorate has gradually increased. Thus an adjustment in our projection method was called for that yielded the trend presented in **Figure III**. Starting with the doctorates granted in 1980-81, we show the actual data through 1989-90. The five years of data we project consist of two increases to 1260 doctorates by 1992 followed by a decline to 1200 for the class of 1994 and a subsequent increase in 1995 to 1275 physics doctorates.

Figure III. Actual and projected number of physics doctorates granted, 1980 to 1995.

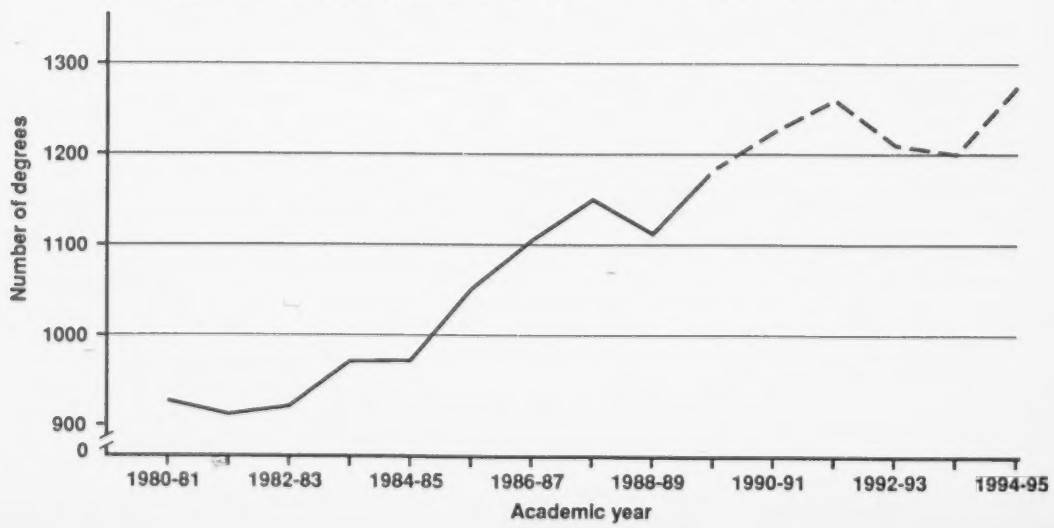


Table X. Physics degrees by type of institution* and geographic region, 1989–90.

Geographic region**	Bachelor's degrees			Master's degrees		Terminal master's degrees		Doctorates
	Institution type			Institution type		Institution type		Institution type
	I	II	III	II	III	II	III	III
New England	114	7	338	10	106	6	68	162
Mid Atlantic	467	47	362	10	213	9	91	234
E. N. Central	338	120	341	52	149	51	99	195
W. N. Central	225	51	130	19	35	16	24	54
S. Atlantic	286	87	322	19	104	38	59	147
E. S. Central	114	31	71	14	23	7	19	31
W. S. Central	165	52	186	14	53	21	43	87
Mountain	99	11	211	2	72	5	36	61
Pacific	323	111	502	30	184	44	112	212
Subtotal	2131	517	2463	170	939	197	551	1183
Subtotal				1109		748		
Total		5111			1857			1183

**Institution type indicates the highest physics degree offered; type I = Bachelor's degree, type II = Master's degree, type III = Doctorate.*
***See Table IX for explanation of geographic region.*

A geographic distribution of the four types of physics degrees granted in 1989-90 is presented in **Table X**, by type of institution. Transfer students were mentioned in connection with **Table VIII**, but it is **Table X** that offers some detail on the size of that group of students. For example, the fourth column of data indicates that 170 students needed to transfer from the master's institutions in order to pursue their doctoral studies. The 6% increase in doctorates granted over the previous year appears to be well distributed among the nine regions.

Minority groups are defined as those who have a small but notable representation among the physics graduates, a definition that clearly applies to women who are granted physics degrees. The first column of data in **Table XI** indicates the number of women, both U.S. and foreign, among each of the four groups of degree recipients. The number of graduate degrees conferred increased over the previous year and so did the number of women among them; however, a bare majority (54%) of the 109 women doctorate recipients are foreign citizens. The fastest growing group among the six groups listed in **Table XI** are foreign Orientals who continue to come to the U.S. as graduate physics students. The decline in U.S. blacks at the bachelor's level is entirely attributable to the men.

Table XI. Number of physics degrees granted by sex and minority group* status and citizenship, 1989–90.

Type of degrees	Sex	Total no. of degrees	Black		Native American Indian	Hispanic		Oriental		Asian Indian		Arab	
			U.S.	Foreign		U.S.	Foreign	U.S.	Foreign	U.S.	Foreign	U.S.	Foreign
Bachelor's	Men	4345	103	11	6	63	17	154	66	21	29	23	24
	Women	766	39	2	–	7	–	33	5	8	7	1	1
	Total	5111	142	13	6	70	17	187	71	29	36	24	25
Master's enroute	Men	943	10	1	1	12	13	25	227	7	51	–	9
	Women	166	2	1	–	–	1	9	62	2	14	1	2
	Total	1109	12	2	1	12	14	34	289	9	65	1	11
Terminal master's	Men	622	13	8	–	3	8	15	73	5	21	2	12
	Women	126	2	–	–	1	1	3	19	4	11	1	2
	Total	748	15	8	–	4	9	18	92	9	32	3	14
Doctor's	Men	1074	5	5	–	3	15	22	220	5	73	–	21
	Women	109	–	–	–	1	2	7	30	1	10	–	2
	Total	1183	5	5	–	4	17	29	250	6	83	–	23

**Minorities in AIP surveys are defined as groups with a low representation in the physics community, but one whose participation has aroused considerable interest.*

ASTRONOMY

Table XII. Trend in astronomy enrollments* and degrees, 1981 to 1991.

Academic year	No. of astronomy degrees granted (July 1 to June 30)				Undergraduate astronomy major enrollments		Graduate astronomy enrollments	
	Bachelor's	Master's enroute	Terminal master's	Doctor's	Juniors	Seniors	Total	1st year
1981–82	181	54	15	70	252	224	647	142
1982–83	138	61	22	81	274	232	670	178
1983–84	137	51	22	74	242	217	688	154
1984–85	145	56	16	66	239	212	716	151
1985–86	169	61	24	86	232	252	711	170
1986–87	172	38	23	72	268	255	755	173
1987–88	181	51	24	94	250	285	731	171
1988–89	196	77	16	94	213	275	780	169
1989–90	176	77	17	89	223	200	842	186
1990–91					312	218	880	192

**Includes part-time students.*

Astronomy departments are divided into two groups, the separate ones and those that are combined with physics departments. The trend data shown in **Table XII** represents a 100% response from all 65 astronomy departments. A similar situation to that described in connection with the physics majors exists among the astronomy undergraduates where a growing number of them extend their senior status over more than one year. In 1989-90 we began to subtract the fifth-year seniors, and hence the trend data reflect a substantial decrease for that year.

The format of **Table XIII** has been revised to include the fifth-year undergraduates and divide the graduate students on the basis of citizenship. By showing the contributions from the two types of astronomy departments referred to above, we find that the separate doctoral departments continue to play the biggest role in educating astronomers.

This report was prepared with the help of Thomas N. Stovall.

Table XIII. Astronomy enrollments 1990–91 and degrees 1989–90 by type of institution.

		Bachelor's-granting		Master's-granting		Doctoral-granting		Total
Type of astronomy department		Comb. dep'ts.	Sep. dep'ts.	Comb. dep'ts.	Sep. dep'ts.	Comb. dep'ts.	Sep. dep'ts.	
Number of dep'ts.*		14	7	2	2	10	30	65
Astronomy degrees	Bachelor's	18	13	10	3	12	120	176
	Master's enroute	–	–	–	2	3	72	77
	Terminal master's	–	–	2	4	–	11	17
	Doctor's	–	–	–	–	8	77	85
Astronomy enrollments	Annual intro. enrollments in astronomy dep'ts.	10 000	2450	1700	1300	5550	44 700	65 700
	Annual enrollments of intro. astronomy taught in physics dep'ts.	36 760		22 920		52 620		112 300
	Total	–	–	–	–	–	–	178 000
	Junior astronomy majors	47	21	7	15	19	203	312
	Senior astronomy majors	43	19	8	11	16	121	218
	Fifth-year undergraduates	3	2	1	5	1	54	66
	First-year graduate students US	–	–	2	7	27	118	154
	First-year graduate students Foreign	–	–	1	–	5	32	38
	Total graduate students US	–	–	23	18	94	535	670
	Total graduate students Foreign	–	–	5	3	26	176	210

**This survey includes only degree-granting astronomy departments.*